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BCM5755
PRODUCT Brief

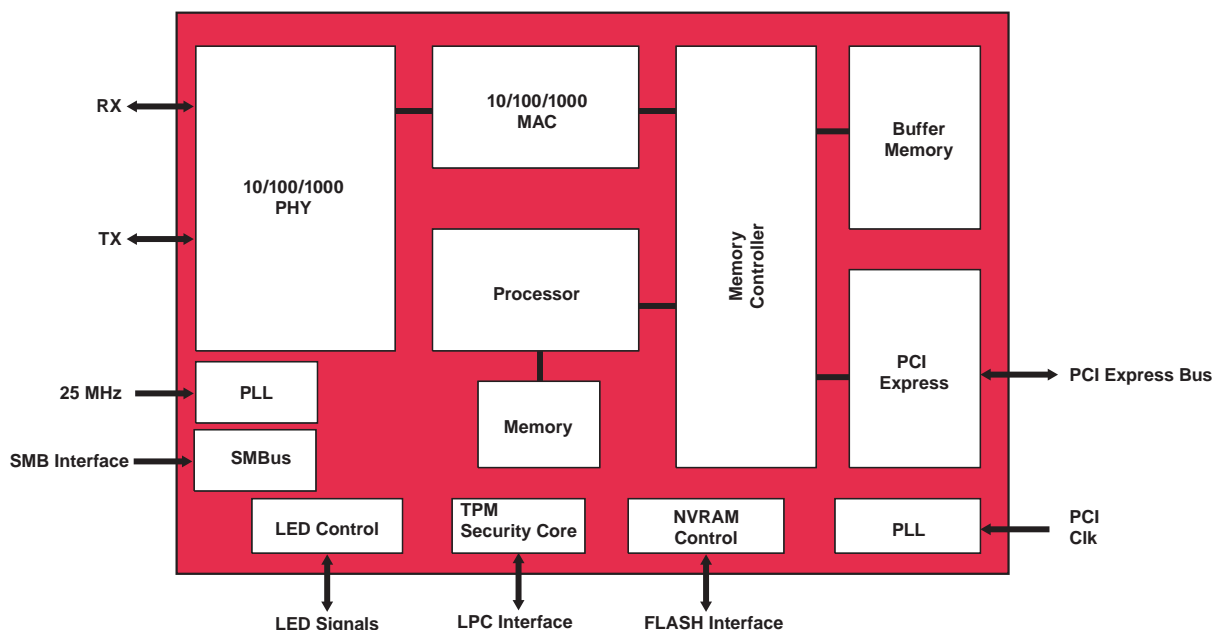# 10/100/1000BASE-T CONTROLLER WITH INTEGRATED TRANSCEIVER

FEATURES

- **Single-chip device for LAN-on-Motherboard (LOM) desktop applications**

- **Integrated 10/100/1000BASE-T transceiver and MAC**
  - SMBus 2.0 controller
  - On-chip voltage regulation

- **Secure Foundation™ provides TPM 1.2 and NGSCB support**
  - Compliant with TCG 1.2 specification
  - Secure key management and strong authentication capabilities

- **PCI Express® host interface**
  - x1 PCIe™ v1.1
  - Active State Power Management (ASPM) capability
  - Message Signal Interrupt (MSI)

- **Performance features**
  - TCP, IP, and UDP checksum
  - Receive-side scaling (RSS) for multicore client processors
  - Microsoft Large Send Offload
  - Interrupt coalescing

- **CableChecker™ diagnoses costly cable issues**
  - CableChecker leverages Broadcom's extensive PHY expertise
  - Continually examines cabling to find problems

- **Robust Wake on LAN (WoL)**
  - Standards-compliant WoL and out-of-box mode WoL
  - Tested over many generations and hundreds of configurations

- **Industry-compliant alerting features**
  - Alert Standard Format (ASF) 2.0 support
  - Secure power-on and power-off

- **JTAG**

SUMMARY OF BENEFITS

- **Proven technology built on nine generations of controller products**

- **Wirespeed performance increases user performance**
  - PCI Express provides wirespeed non-blocking throughput
  - TCP/IP offloads significantly reduce CPU utilization
  - TCP/IP offloads significantly increase throughput to enable faster downloads of large files

- **Proven TPM-based security features protect corporate information**
  - TPM provides industry-standard security to enterprise platforms
  - TPM delivers strong authentication and encryption

- **CableChecker reduces TCO and support calls**
  - Automatically pinpoints the location of cabling issues
  - Eliminates the need to send service technicians to diagnose link problems

- **Secure alerting and power cycling reduces IT costs**
  - Remote monitoring capabilities actively monitor client PC problems
  - Remote power cycling enables reduction in desk-side IT visits

- **Active State Power Management (ASPM) capability**

- **Message Signal Interrupt (MSI)**

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BCM5755 Reference Design

The BCM5755 is a fully integrated 10/100/1000BASE-T Gigabit Ethernet media access control and physical layer transceiver solution for high-performance network applications. The BCM5755 combines a triple-speed, IEEE 802.3-compliant media access controller (MAC), PCI Express bus interface, on-chip buffer memory, and integrated physical layer transceiver in a single device. It is fabricated in a low-voltage silicon process providing an ultra-low power solution. By itself, the BCM5755 provides a complete single-chip Gigabit Ethernet LAN-on-Motherboard (LOM) solution.

The BCM5755 includes a 10/100/1000-Mbps Ethernet MAC with full/half-duplex capability at all speeds. Support for the following 802.3 functions is featured in the MAC: VLAN tagging, layer 2 priority encoding, and full-duplex flow control.

The transceiver is fully compatible with the IEEE 802.3 standard for auto-negotiation of speed. Additionally, several plug-and-play enhancements are included to make the device even more user-friendly. A link quality indicator LED and a GUI application give installers an instant visual indication of problems. This includes physical wiring defects or channel conditions, such as excessive cable length, return loss, crosstalk, echo, and noise.

Broadcom's remote cable management and diagnostics software can be used with the device to provide remote management of the cable and a first level of diagnostics and fault isolation.

Target applications of the BCM5755:
- Desktop PC LoM

Software drivers available:
- Windows® 98, NT®, 2000, XP
- Linux® 2.2, 2.4, 2.6

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